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REMARKS

The applicants' respectfully request reconsideration in view of the Amendment and following remarks. Support for amended claims 16, 17 and 18 can be found for example, in the specification at the middle of page 1, ("heat roller fixing type"), at the bottom of page 2, ("heat roller fixing type"), at page 7, four lines from the bottom of the page. Support for having one double bond can be found at page 4, four lines from the bond of the page "compound having **a** double bond". The applicants have amended claims 21, 22 and 23 in order to overcome the 35 USC §112 rejections. Support for newly added claim 28-30 can be found in the specification in the last paragraph at page 4. Support for newly added claims 31-33 can be found in the specification in the middle of page 7 of the specification. The applicants have rewritten claims 22 and 23 as newly added claims 34 and 35.

The disclosure was objected to because of allegedly new matter being added to the specification. Claims 16-18 and 26 were rejected under 35 U.S.C § 112, sixth paragraph. Claim 22 was rejected under 35 U.S.C § 112, second paragraph. Claims 16, 17, 18, 19, and 21-27 were rejected under 35 U.S.C § 112, first paragraph. Claim 16, 23, 24, and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese patent 2-184864 ("JP '964") combined with page 13 of Grant & Hackh's Chemical Dictionary 5th Edition ("Hackh's") and Diamond Handbook of Imaging Materials page 169 ("Diamond"). Claims 16, 21, 23, 26 and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Masuda, U.S. patent 5,817,843 ("Masuda") combined with Inada, U.S. patent 5,741,617 ("Inada") and Minami, U.S. patent 5,179,171 ("Minami") as evidenced by Aldrich Catalog, page 1063 ("Aldrich") and Polymer Technology Dictionary, page 487 ("Polymer"). Claims 16, 22, 23, 24, 25 and 26 were rejected

under the judicially created doctrine of obviousness-type double patenting over claims 35-37 of copending application 09/331,729. The applicants respectfully traverse these rejections.

OBJECTION TO DISCLOSURE

The disclosure was objected to because it allegedly contained new matter. The Examiner stated that the intrinsic viscosity did not specify the solvent and the temperature. The Examiner is correct at page 3 of the Office Action, that the specification does not contain the words "measured in decalin at 135 C". However, the applicants believe that it would be clear to one of ordinary skill in the olefin and toner art that the intrinsic viscosity would be measured in decalin at 135°C. Support for the definition of intrinsic viscosity as being "measured in decalin at 135°C" can be found in the Appendixes 2 and 3 that was submitted in the amendment filed March 10, 2003. Again, Appendix 3 includes nine patents that show in the olefin art that it is clear to one of ordinary skill in the olefin art to measure intrinsic viscosity in decalin at 135°C. In Appendix 2, U.S. patent 6,210,852 (" '852 patent") also issued to Toru Nakamura, who is one of the named inventors in this application, discloses that the intrinsic viscosity i.v., is at 135°C when 1.0 gram of the polymer is uniformly dissolved in 100 ml of decalin.

Again, in the '852 patent, component (a) substantially corresponds to the applicants' component (i) and component (b) substantially corresponds to the applicants' claimed component (ii). The '852 patent states at col. 4, lines 39- 52:

> "With respect to the polymer or polymer fraction (a) (hereinafter referred to as component (a)),
>
> a **number average molecular weight** [measured by GPC (gel permeation chromatography) in terms of polyethylene, which is applied to the following] is less than 7,500, preferably **1,000 to less than 7,500**, more preferably 2,000 to less than 7,500;

a **weight average molecular weight** is less than 15,000, preferably **1,000 to less than 15,000,** more preferably 4,000 to less than 15,000;

an intrinsic viscosity (i.v., inherent viscosity at 135° C. when 1.0 g of the polymer is uniformly dissolved in 100 ml of decalin) is less than 0.25 dl/g; and

a glass transition point (Tg) is preferably less than 70° C.

With respect to the polymer or polymer fraction (b) (hereinafter referred to as component (b)),

a **number average molecular weight is 7,500 or more**, preferably 7,500 to 50,000;

a **weight average molecular weight is 15,000 or more**, preferably 15,000 to 500,000; and

an intrinsic viscosity (i.v.) is 0.25 dl/g or more." (emphasis added).

Although this patent application has a filing date prior to the filing date of the '852 patent its clear that the components A and B would have to have the intrinsic viscosity measured at 135°C dissolved in the decalin. The Examiner asserts at page 5 of the Office Action that the polymers are different. However, the preferred monomers taught in the '852 patent are ethylene for the acyclic olefin and norbornene for the cyclic olefin copolymer (see col. 12 of the '852 patent). These are the same preferred monomers disclosed in this application.

Furthermore, enclosed in Appendix 3 previously submitted with the applicants last amendment is a search list that found 225 patents that issued between the years of 1991 and 1995 all that contain the terms "intrinsic viscosity" and "decalin." Enclosed in Appendix 3 is the list of the first 50 patents. The Examiner will note that most of the titles of these patents relate to polymers preferably of the olefin type polymer. Out of the first ten patents, only patent number five did not state that the intrinsic viscosity was measured at 135°C with decalin. Although it contained the word decalin it did not relate to the intrinsic viscosity. The applicants have

enclosed the relevant pages from each of the other nine patents that cite the intrinsic viscosity in which each patent refers to intrinsic viscosity measured in decalin at 135°C. The values given in the applicants' specification can only be measured in decalin at 135°C.

At page 6 of the Office Action, the Examiner asserts three patents in which the measurement of intrinsic viscosity is not in decalin at 135° C. However, the applicants believe that measuring intrinsic viscosity in decalin at 135 °C is the standard for the art.

At page 6, paragraph 2 of the Office Action, the Examiner asserted that the specification does not disclose the date of the particular version of the standard that was used. The appropriate revision of the DIN 53461 would be the one that was currently in use at the time of the filing of the application (revised January 1987). Between the January '87 version of DIN 53461 and priority date of this patent application (Aug. 02, 85) no additional version of said DIN was issued. Said DIN was withdrawn in March 1996 (see Appendix 1 which has the cover page of DIN revised January 1987 and the front page indicated that the DIN has been withdrawn in 1996). If the applicants wanted the earlier, 1969 revision, the specification would have stated that. It is clear that this revision would be one applicable unless the applicants stated that the earlier revision was applicable.

For the above reasons the applicants believe the specification is enabled and that the amendment to the specification adds no new matter. For the above reasons this objection should be withdrawn.

§ 112 SIXTH PARAGRAPH REJECTION

Claims 16-18 and 26 were rejected under 35 U.S.C § 112, sixth paragraph. The applicants have amended the term in these claims from "heat roller fixing means" to "fixed **by the action of a heated roller".** Support can be found, for example, in the specification at the

middle of page 1, ("heat roller fixing type"), at the bottom of page 2, ("heat roller fixing type"), at page 7, four lines from the bottom of the page. For the above reasons, this rejection should be withdrawn.

§ 112 SECOND PARAGRAPH REJECTION

Claim 22 was rejected under 35 U.S.C. § 112, second paragraph. The applicants believe that claim 22 as amended is in compliance with 35 U.S.C § 112, second paragraph and respectfully request that this rejection be withdrawn.

§ 112 FIRST PARAGRAPH REJECTION

Claims 16, 17, 18, 19 and 21 through 27 were rejected under 35 U.S.C. § 112, first paragraph. The applicants believe that the claims as amended and for the reasons stated above, the claims are in compliance with 35 U.S.C. § 112, first paragraph. For the above reasons this objection should be withdrawn.

103 REJECTION OF JP '864

Claims 16, 23, 24, and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '864 in view of Hackh's and Diamond. JP '864 does not disclose **one double bond** in the alicyclic compound as is required by independent claim 16.

Furthermore as previously argued, JP '864 does not disclose alpha olefins as required by the applicants claimed invention. The Examiner points out that JP '864 discloses a methacrylic acid and asserts that it is an alpha olefin acid. The Examiner has relied upon Hacks for this assertion. The applicants claim "an alpha olefin" not an "alpha olefin acid". An alpha olefin is defined as having a double bond between the first and second carbon atom. Appendix 4 in the applicants' last amendment lists several patents that defines alpha olefins. The one position is

indicated as having the double bond. Alpha olefins are a term recognized by one of ordinary skill in the olefin art. The Examiner stated that the applicants haven't defined the term alpha olefin, however, again this is a well recognized term in the art. Alpha olefins have the following formula:

$$CH_2 = CHR$$

wherein R is hydrogen or alkyl.

For example, the following are alpha-olefins (α-olefins)-

$CH_2=CH_2$ - ethylene

$CH_2=CHCH_3$ - propylene

$CH_2=CHCH_2CH_3$ - 1-buylene

$CH_2=CHCH_2CH_2CH3$ - 1-pentene

As previously stated JP '864 does not disclose the alpha olefins as is claimed by the applicants.

The applicants do not believe that the secondary references cure the deficiencies of the primary reference for the above reasons this rejection should be withdrawn.

REJECTION OVER MASUDA

Claims 16, 21, 23, 26 and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Masuda combined with Inaba, and Minami as evidenced by Aldrich and Polymer. Masuda does not recognize the advantage of the applicants' claimed binder resin. Masuda discloses that any binder resin known in the art can be used, however, the applicants

have found that using their specific binder resin has exhibited unexpected properties. There would be no reason for one to selectively pick and choose the applicants claimed invention.

Furthermore, the applicants believe that the term "alicyclic hydrocarbon resins" used in Mausda cannot be construed to refer to the instantly used binder-copolymers. The applicants have attached a definition of "hydrocarbon resin" from a book "Hydrocarbon Resins" from Mildenberg et al., chapter 1.1-1.2 (see enclosed copy). Furthermore, in the applicants view the Minami patent cannot be used as a secondary reference as the use for the products disclosed by Minami is "electrophotographic toner" instead of "binder resin for a toner".

The Examiner must consider the references as a whole, In re Yates, 211 USPQ 1149 (CCPA 1981). The Examiner cannot selectively pick and choose from the disclosed multitude of parameters without any direction as to the particular one selection of the reference without proper motivation. The mere fact that the prior art may be modified to reflect features of the claimed invention does not make modification, and hence claimed invention, obvious unless desirability of such modification is suggested by the prior art (In re Baird, 29 USPQ 2d 1550 (CAFC 1994) and In re Fritch, 23 USPQ 2nd. 1780 (Fed. Cir. 1992)). The applicants disagree with the Examiner why one skilled in the art with the knowledge of the references would selectively modify the references in order to arrive at the applicants' claimed invention. The Examiner's argument is clearly based on hindsight reconstruction.

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching, suggestion, or incentive supporting this combination, although it may have been obvious to try various combinations of teachings of the prior art references to achieve the applicant's claimed invention, such evidence does not establish prima facie case of obviousness (In re Geiger, 2 USPQ 2d. 1276 (Fed. Cir. 1987)). There would

be no reason for one skilled in the art to combine Masuda combined with Inaba, and Minami as evidenced by Aldrich and Polymer. For the above reasons, this rejection should be withdrawn.

The applicants further believe that dependent claims 31-33 are patentable.

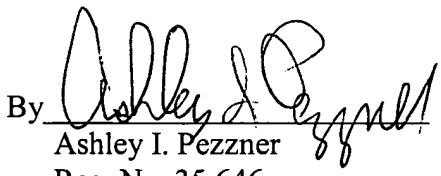
The applicants have enclosed a terminal disclaimer to overcome the double patenting rejection of US serial number 09/331,729.

A two month extension fee has been paid. If there are any additional fees due in connection with the filing of this response, including any fees required for an additional extension of time under 37 CFR 1.136, such an extension is requested and the Commissioner is authorized to charge any debit or credit any overpayment to Deposit Account No. 03-2775.

For the reasons set forth above, Applicants believe that the claims are patentable over the references cited and applied by the Examiner and a prompt and favorable action is solicited. The applicants believe that these claims are in condition for allowance, however, if the Examiner disagrees, the applicants respectfully request that the Examiner telephone the undersigned at (302) 888-6270.

Respectfully submitted,

CONNOLLY BOVE LODGE & HUTZ LLP

By 

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AIP/cmd
Enclosures: Appendix 1
Hydrocarbon Resins
Terminal Disclaimer

313272

Dokumentanzeige

DIN	1987-01-00	ST*N	H*M

Achtung, zurückgezogenes Dokument!

Dokumentnummer	DIN 53461
Ausgabedatum	1987-01-00
Dokumentart	ST*N
Aktualisierung	H*M
Titel (Deutsch)	Prüfung von Kunststoffen; Bestimmung der Formbeständigkeitstemperatur
Titel (Englisch)	Testing of plastics; determination of heat deflection temperature under load
Titel (Französisch)	Essai des matières plastiques; détermination de la température de stabilité dimensionnelle
Kurzreferat (Deutsch)	Die Norm legt 3 Verfahren zur Bestimmung der Formbeständigkeitstemperatur (HDT) von Kunststoffprobekörpern, die einer konstanten Biegebeanspruchung ausgesetzt sind, fest. Verfahren A, bei einer aufgebrachten Biegespannung von 1,80 N/mm<(hoch)2>, Verfahren B, bei einer aufgebrachten Biegespannung von 0,45 N/mm<(hoch)2> und Verfahren C, bei einer aufgebrachten Biegespannung von 5,0 N/mm<(hoch)2>.
Kurzreferat (Englisch)	This standard specifies three methods for the determination of the heat deflection temperature (HDT) under bend. (bending stress) of plastics: method A, using a nominal surface stress of 1,80 N/mm<(hoch)2>, method B, using a nominal surface stress of 0,45 N/mm<(hoch)2> and method C, using a nominal surface stress of 5,0 N/mm<(hoch)2>.
Zurückziehungsdatum	1996-03-00
Herausgeber	DIN Deutsches Institut für Normung e.V.
Bezugsquelle	Beuth Verlag GmbH
Sachgruppe	83.080.01 NA Kunststoffe
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Vorgängerdokument	DIN 53461 (1984-07)*DIN 53461 (1969-09)

Dokumentanzeige

Nachfolgedokument	DIN EN ISO 75-1 (1996-03)* DIN EN ISO 75-2 (1996-03)
Intern. Übereinstimmung	ISO 75 (1987-04), EQV
Zitiert sind	DIN 1319-3 (1983-08) * DIN 7739-2 (1967-07) * DIN 16770-1 (1986-05) * DIN 16770-2 (1986-05) * DIN 41301 (1967-07) * DIN 53424 (1978-12) * DIN 53451 (1972-07) * DIN 53462 (1987-01) * DIN 53487 (1975-10) * ISO/DIS 75 (1984)
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Suchbegriffe (Deutsch)	BIEGEBEANSPRUCHUNG * BIEGESPANNUNG * BIEGEVERSUCH * FORM * FORMBESTAENDIGKEIT * KUNSTSTOFF * MECHANISCHE ELASTIZITAET * PRUEFUNG * PRUEFVERFAHREN * TEMPERATUR * WAERME * WAERMEBESTAENDIGKEIT
Suchbegriffe (Englisch)	BEND TESTING * BENDING STRESS * DIMENSIONAL STABILITY * ELASTICITY * HEAT * PLASTICS * SHAPE * TEMPERATURE * TESTING * THERMAL STABILITY * RESILIENCE
Suchbegriffe (Französisch)	CONTRAINTE DE FLEXION * ESSAI DE FLEXION * FORME * PLASTIQUE * RESILIENCE * ESSAI * TEMPERATURE * CHALEUR * STABILITE THERMIQUE

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1 Terminology

The term "resin" is not sharply defined; originally, it was applied to low molecular mass natural products, usually yellowish to brown in color, transparent to opaque, soft to brittle, easily fusible, tacky, amorphous materials, soluble in most common organic solvents and virtually insoluble in water. With the development of chemical industry, the term resin has also been applied to synthetic materials used as substitutes for natural resins, or to materials with similar physical properties. In the international standards ISO 472 (Plastics-Vocabulary) and ISO 4618/3 (Paints and Varnishes, Part 3: Terminology of Resins), resins are defined as solid, semisolid, or pseudosolid organic materials that have an indefinite and often high relative molecular mass, and generally soften or melt over a range of temperatures. Very often the term resin is also used for any polymer that is a basic material for plastics (e.g., polyethylene resin). In the German standard DIN 55958, resin ("Harz") is used as a collective term for solid to liquid organic products. Their molecular mass distribution can vary over a wide range. Resins include a variety of organic substances of different chemical composition, but with many physical properties in common.

Generally, resins are products with medium molecular mass. Their average molecular mass does not usually exceed 10 000 and, in most cases, is much lower. Resins have an amorphous and often complex structure. They do not exhibit a sharp melting point, but like all amorphous polymer systems, have a glass transition temperature, and are characterized by their softening point - the transition temperature from a pseudosolid to a plastic state.

Resins can be subdivided into natural and synthetic resins.

1.1 Natural Resins

In ISO 4618/3, natural resins are defined as resins of vegetable or animal origin. The term includes rosins, i.e., gum, wood, or tall oil rosins from tree and plant exudates, wood extracts or by-products of paper manufacturing; fossil resins such as amber; mined resins such as asphaltite; secretion products from insects such as shellac; and their main derivatives.

1.2 Synthetic Resins

In ISO 4618/3, synthetic resins are defined as resins resulting from controlled chemical reactions, such as polyaddition or polycondensation between well-defined reactants, that do not themselves have the characteristics of resins. Synthetic resins are also obtained by polymerization (ISO 472) of unsaturated monomers. This term includes two subgroups:

- Hydrocarbon resins, i.e., synthetic resins from coal tar, petroleum, and turpentine feedstocks, produced by polymerization. These resins are used like natural ones, e.g., in combination with other polymers to impart special properties, such as tack, flow, and hardness, to a material.
- Synthetic resins, obtained mainly by addition polymerization and polycondensation, which are intermediates in the synthesis of higher molecular mass plastics.

Resins may be further classified:

- by origin: natural or synthetic resins; petroleum, terpene, or coal-tar resins (indene-coumarone resins or coal-tar pitch)
- by physical aspect: liquid, soft or hard resins
- by the reaction mechanism of their production or processing: resins from polyaddition, polymerization, or polycondensation
- by application and processing: resins for paints and varnishes or printing inks; tackifying, casting, laminating, or impregnating resins
- by other characteristics: thermosetting, thermoplastic, saponifiable resins, etc.
- by intended modification of product properties: tackifier, plasticizer, processing aid, hard resin, fixing resin, etc.

This book covers those hydrocarbon resins which are synthetic resins obtained by polymerization.